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ABSTRACT OF THE DISCLOSURE

Laser sources output laser lights  $L_1$  and  $L_2$  having different wavelengths so as to increase an accuracy of an endpoint detection of polishing processing by enabling an accurate detection of a film thickness of a layer insulating film on a surface of a wafer to be polished by the CMP processing, the lights are emitted from a detection window via a beam splitter to the layer insulating film formed on the surface of the wafer to be polished by a pad, different optical detectors detect interference lights corresponding to the laser lights  $L_1$  and  $L_2$  reflected and generated from a surface of the layer insulating film and a pattern under the surface via the detection window, the beam splitter, and a dichroic mirror, the detection results are supplied to a film thickness evaluation unit 7, a film thickness of the layer insulation film is detected on the basis of a relationship between intensities of the reflected interference lights to the laser lights  $L_1$  and  $L_2$  or the intensity ratio, and an endpoint of polishing processing is determined when the film thickness is equal to a predetermined value.